

CHAPTER IV

DESIRED CONDITIONS and TRENDS

Currently, the Forest Land and Resource Management Plan (Wallowa-Whitman National Forest, April 1990), provides overall guidance for management activities occurring within the Meadow Creek Watershed. Over the years, this management direction has been refined on many levels and incorporated into the Plan as amendments. Efforts to conserve and manage threatened and endangered species, and to implement ecosystem management, will continue to affect future land management options within this watershed as the Blue Mountain Province moves toward revising their Forest Plans in the next 5+ years.

A. FOREST PLAN MANAGEMENT AREAS

The Wallowa-Whitman National Forest Land and Resource Management Plan contains descriptions of management goals, direction, and desired future condition for a number of management areas or land allocations on the National Forest. It also contains standards and guidelines for the management of specific resources. National Forest System lands within the Meadow Creek Watershed (86) contain seven of the management areas described in the Forest Land and Resource Management Plan. The following is a listing of NFS land allocations within the analysis watershed and their acreages.

Wallowa-Whitman National Forest:

MA1	Timber Production Emphasis	37,167 acres	44 percent
MA1W	Timber Production Emphasis	1,547 acres	2 percent
MA3	Wildlife/Timber Emphasis	18,511 acres	22 percent
MA12	Research Natural Areas	180 acres	<1 percent
MA14	Starkey Experimental Forest	25,415 acres	30 percent
MA15	Old Growth Forest	2,094 acres	2 percent
MA16	Administrative/Recreation Sites	47 acres	<1 percent
		84,961 acres	

There are approximately 13,315 acres of other ownership within the analysis watershed including Umatilla National Forest (1,694 acres), State, private, tribal, and Bureau of Land Management. Total area within the analysis watershed is 115,852 acres.

The following are summaries of the direction for the major management areas within the Upper Grande Ronde River Watershed:

Management Area 1 and 1W (Timber Production Emphasis)

Management emphasizes wood fiber production on suitable forest land while providing relatively high levels of forage and recreational opportunities. Temporary forage increases are expected as a result of silvicultural activities. Timber is to be managed according to Forest-wide standards and guidelines.

Timber management generally will provide a mixture of even-aged stands up to 40 acres in size. These stands are to be managed at intensities promoting vigorous, healthy trees commensurate with the productive potential of the sites on which they are growing. Regeneration harvest units will be separated by uncut stands containing one or more logical logging units. This mixture of stand ages and sizes provides a degree of diversity for big game and other wildlife species and a high level of wood fiber and forage production. Open road density is generally limited to 2.5 miles of road per square mile. In that portion of Management Area 1 within identified elk winter range (MA1W), open road density is limited to 1.5 miles per square mile. This Management Area contributes to the Forest's allowable sale quantity.

Management Area 3 (Wildlife/Timber Emphasis)

This management area is intended to provide a broad array of Forest uses and outputs with emphasis on timber production. However, timber management and other silvicultural activities are designed to provide near-optimum cover and forage conditions on big game winter range (MA3).

When in a managed condition, timbered areas are generally a mosaic of even-aged stands that are 40 acres or less in size. These stands are to be dispersed in order to provide a mixture of forage areas, satisfactory cover, and marginal cover. Regenerated stands must contain trees that are at least 10 feet tall before adjacent stands can be harvested. Special restrictions apply to any harvest activity that reduces cover. This is done in order to achieve optimum distribution of cover for elk. Open public road access is generally limited to not more than 1.5 miles per square mile during the time areas are being used by big game. On winter ranges, adequate road closure will result from snowfall. Improved forage and cover distribution will help to maintain or improve herd productivity. Road access will remain at a level low enough to maintain habitat quality and recreation values. Availability of big game escape opportunities, along with a low level of road access on summer ranges will provide big game hunting opportunities not found in MA1. This Management Area contributes to the Forest's allowable sale quantity.

Management Area 14 (Starkey Experimental Forest and Range)

This Management Area includes the Starkey Experimental Forest and Range, which is generally located at the heart of the Meadow Creek Watershed. The area is allocated for research use and is managed to protect existing research projects and to provide for future research needs. In addition, the experimental forest is expected to provide a variety of other benefits including timber and livestock forage when compatible with research uses. This management area does not contribute to the Forest's allowable sale quantity.

Management Area 15 (Old Growth Forest Preservation)

These areas are intended to maintain habitat diversity, preserve aesthetic values, and to provide old growth habitat for wildlife. Old growth stands contain mature and over-mature trees in the overstory, have a multi-layered canopy, and contain trees of several age classes. Standing dead trees and downed woody material are present. Evidence of human activity may be present but does not significantly alter other stand characteristics.

Twenty animal species have been identified on the Wallowa-Whitman National Forest which exhibit definite preference for mature or old growth forest. Management indicators for old growth forest include: pine marten, pileated woodpecker, northern three-toed woodpecker, black-backed three-toed woodpecker, and goshawk. Old growth forest provides the best habitat for these species. It is unknown whether other habitats are sufficient to maintain viable populations of these species without an available reservoir of old growth. This Management Area exists as stands ranging widely in elevation and aspect and occurring in a variety of plant communities. It is intended that these stands will continue to provide the quality habitat needed by those species dependent on mature and old growth timber.

Management Areas 12 and 16

The other two Management Areas found in the Upper Grande Ronde River Watershed include MA12 - Research Natural Area and MA16 - Administrative and Recreation Sites. In total, these two management areas make up less than one percent of the total land area within the watershed and they do not contribute to the Forest's allowable sale quantity.

B. DESIRED CONDITIONS MEASURES AND TRENDS

The following are discussions of the desired conditions and condition for resources included under each of the major issues identified in Chapter 2.

THE PHYSICAL DIMENSION

1. AQUATICS

Desired conditions for aquatic and riparian-wetland areas within Meadow Creek Watershed would be dynamic, resilient, and consistent with local climate, geology, soils, land-forming processes, and potential natural vegetation. Aquatic and riparian-wetland habitat would be characterized by high-quality water and complex, well-distributed physical attributes that lead to high quality fish habitat and properly functioning stream channels.

High-quality water and fish habitat and properly functioning stream channels are attained when adequate vegetation, landform, or large woody debris is present to:

- Dissipate stream energy associated with high flows, thereby reducing erosion and improving water quality;
- Filter sediment, capture bedload, and aid in floodplain development;
- Improve flood-water retention and groundwater recharge;
- Develop root masses that stabilize streambanks against cutting action;
- Develop diverse ponding and channel characteristics to provide habitat (water depth, duration, and temperature) necessary for fish production, and to support greater biodiversity (USDI BLM 1993).

Elements necessary for fish habitat/production:

- 57 or less degree F maximum weekly average temperatures throughout a Watershed;
- Streambed substrate of less than 12% fines, and cobble of less than 20 percent embedded;
- Stream turbidity low;
- There are no physical barriers to fish migration;
- There are over 100 pieces of large wood (12" diameter and 35" long) per mile;
- Pool frequencies meet standards shown in Pool frequency table below;
- Pools over one meter deep are increased by approximately 200% throughout Meadow Creek and its major fishbearing tributaries;
- Roads increase drainage network of watershed by less than 5%;
- Road density throughout the watershed is less than 2 miles per square mile and no valley bottom roads exist.

Trends

Past land management activities on NFS lands within the Meadow Creek Watershed have led to adverse effects on aquatic and riparian-wetlands resources. Eight of 10 subwatersheds are "not properly functioning" and two are "functioning at risk." The primary influential factors for all subwatersheds are: low percentages of adequately stocked RHCAs, high percent of past harvest within RHCA, and high road densities outside of and within RHCAs. The trend of adverse effects has been reversed however within the last 5-10 years with implementation of new management direction, laws and policies (i.e. PACFISH).

AQUATIC DESIRED CONDITION MEASURES:

The following measures will be used to assess attainment of desired aquatic and riparian-wetland conditions:

- A. Stream flow - Late spring and fall rain events contribute to the flows. Peak flows usually occur in March and April with flows gradually decreasing to minimum discharges in August and September.
- B. Stream width/depth ratio - Width/depth ratios should follow the descriptions used in the Rosgen (1996) channel classification as displayed in the following table and correspond to channel types.

Rosgen channel classifications.

Rosgen Channel Type	Width/Depth Ratio	Description
A	< 12	steep, highly entrenched, step pool systems with high sediment transport potential. Riparian vegetation usually occurs only on the streambanks
B	> 12	gentle to moderately steep terrain, moderate gradient streams that are moderately entrenched, have low sinuosity and are riffle-dominated
C	> 12	low gradient, moderately high sinuosity, pool/riffle bedform with well-developed floodplains
E	<12	very low gradient, highly sinuous, with low width to depth ratios.
F	> 12	highly entrenched, high width to depth ratio streams

- C. SI Structural Stage (ECA) - The reference condition for the HRV SI structural stage is 5 to 15 percent. Historically 5 to 15 percent of the forested NFS lands in Watershed 86 were in the SI structural stage (or ECA-like condition).
- D. Riparian Vegetation - 100% adequately stocked stands within riparian areas where factors of slope, soil, aspect, and moisture support this condition.
- E. Acres of RHCA affected by timber harvest - Approximately 5 to 15 percent of forested lands within Watershed 86 would be in an open to stand initiation stage like condition including the RHCA's.
- F. Large woody debris - 20 pieces of large (>12" diameter, 35' length) woody debris (LWD) per mile of stream channel.
- G. Streambank Stability - >80% of any stream reach has >90% stability.
- H. Road densities - Road density (open and closed) of <2.0 miles per square mile, with no valley bottom roads, in occupied summer steelhead and bull trout habitat (spawning and rearing).

The following measures will be used to assess attainment of desired fish habitat conditions:

- A. Temperature – Steelhead/Chinook Spawning Temps - 50-57°F
Bull Trout - 7 day avg. max. temperature in a reach during the following life history stages:
Incubation: 36-41°F (2-5°C)
Rearing: 39-54°F (4-12°C)
Spawning: 39-48°F (4-9°C)
In addition, temperatures do not exceed 59°F (15°C) in areas used by adults during migration (no thermal barriers).
- B. Sediment/turbidity - <12% fines, turbidity low
- C. Habitat Access - barriers allow passage

- D. Substrate embeddedness - gravel/cobble dominant or embeddedness <20%
- E. Large woody debris - >20 pieces/mile >12" diameter and adequate recruitment
- F. Pool frequency –

Species	Channel Width (feet)	Pools/Mile
Steelhead	5	184
	10	96
	15	70
	20	56
	25	47
	50	26
Bull Trout	0-5	39
	5-10	60
	10-15	48
	15-20	39
	20-30	23
	30-35	18
	35-40	10
	40-65	9
	65-100	4

- G. Pool quality - pools > 1 meter deep with good cover and cool water, minor reduction in pools by sediment
- H. Drainage network - zero or minimal increases due to roads
- I. Road density – Chinook/Steelhead = <2 mi/mi², no valley bottom roads; Bull Trout = <1 mi./sq. mi., no valley bottom roads. **(Also relates to Roads Analysis – Biological Dimension)**

2. ROADS ANALYSIS – Physical Dimension Factor Measures

The desired condition within the watershed is to provide an adequate, safe, and appropriate transportation system which will meet the needs of administrative and a wide variety of recreational users while protecting/balancing the physical needs of all other resource areas.

Water quality - (Also relates to Roads Analysis – Biological Dimension)

- A. Miles of open native surface drawbottom roads – no valley bottom roads
- B. Miles of roads within 100' of drawbottoms – no valley bottom roads

Water Quantity - (Also relates to Roads Analysis – Biological Dimension)

- A. Miles of road within RHCAs – no valley bottom roads
- B. Miles of drawbottom roads – no valley bottom roads
- C. Number of culverts adequate to handle 100 year flood event - All culverts would be adequate to handle 100 year flood events.

Hydrologic - (Also relates to Roads Analysis – Biological Dimension)

- A. Miles of drawbottom roads - – no valley bottom roads
- B. Number of culverts adequate to handle 100 year flood event – All culverts would be adequate to handle 100 year flood events.

3. SOILS

Desired conditions for soils are primarily related to maintaining and enhancing soil productivity. To accomplish this goal detrimental soil conditions (compaction, puddling, displacement, and severe burning) must be minimized during management activities. Scablands and other areas with shallow soils are given special consideration for the fragile nature of the soils involved in order to protect them and the species that thrive in this habitat.

SOILS DESIRED CONDITION MEASURES

- A. Percent detrimental soil compaction within each SWS - A minimum of 80 percent of an activity area will be in a non-compacted, non-puddled, and/or non-displaced condition."

THE HUMAN DIMENSION

1. ROADS ANALYSIS – Human Dimension Factors

In 1998, Forest Service Chief Mike Dombeck directed the Forest Service to develop a long-term road policy for the National Forest Transportation System. The Roads Policy, which requires a Roads Analysis for any project that affects roads, was published in the Federal Register in January 2001. Any NEPA decisions for projects that affect roads and are scheduled for signature after June 2001 will require a Road Analysis to be completed before signing and implementation.

The shift in public use of national forests, changes in user expectations and the backlog of unfunded road maintenance led the Forest Service to conclude that it needed a new approach for the management, use and maintenance of the national forest road system.

The District management goal for the transportation system is to provide safe and efficient access for all anticipated users including administrative, commercial, and recreational traffic. Roads are to be operated and maintained to minimize impacts to resource values. Principal access roads would be paved or graveled while other roads would be of lower standard. Many roads would be available for use, but some would be closed to standard vehicles. All areas would remain open to all terrain vehicles unless specifically closed by the District Access and Travel Management Plan.

For a majority of the analysis watershed, the transportation system has been designed, built, and maintained primarily for management of the timber resource, but considered all intended uses. The Roads Analysis will produce a plan, which will minimize environmental damage, establish policies to guide decisions on identifying unessential roads, recommend roads to be eliminated or maintained to reduce environmental damage, and assess roads that need to be reconstructed and maintained so that they are safe and can sustain constant public use.

Trends:

Currently there are 714 miles of roads both open and closed within the Meadow Creek Watershed. Of these miles, 577 miles are located on National Forest System lands and 137 miles are located on private, State, tribal, and Bureau of Land Management lands.

On National Forest System lands, 333 miles of road are open to vehicle traffic. There are 244 miles of closed roads. A closed road is usually blocked by an earthen barricade or guardrail and receives little to no vehicle traffic. Roads on NFS lands are either paved, surfaced with crushed gravel or pit run rock, or are native surfaced and spot rocked.

There are approximately 144 miles of drawbottom roads in the analysis watershed. These roads are located parallel and adjacent to stream channels. They channelize the stream, reduce interaction between the stream and its floodplain, reduce riparian vegetation, and can greatly increase sediment yield.

Open road density currently ranges from 1.0 – 5.5 miles per square mile over the entire Meadow Creek Watershed.

ROADS ANALYSIS – Human Dimension Factors Measures

Resource Management and Administrative Use

- A. Open road densities (miles per square mile) for each Forest Plan Management area

Management Areas	Direction (Miles/Sq. Mile)
1	2.5
3, 3A, 1W	1.5
6	Road densities to remain essentially unchanged from 1985 levels.
12	Minimum necessary to provide for research and education.
14	Research dictates road densities as needed.
15	Avoid new road construction
16	Access construction allowed as needed to serve sites or facilitate their use.

- B. Acres of forest land without road access – provide reasonable and appropriate access to forested lands allocated to management activities within forest plan standards above.

Other Ownership Access

- A. Number of access routes to private land inholdings – Provide reasonable access to private land inholdings.

Safety

- A. Maintenance levels reflect current use levels and are adequate to provide safe access to designated user groups as designated in the Access and Travel Management Plan (ATM Plan). Adequate turnouts are provided in roads which are designated to remain on the long term ATM Plan as well as turn arounds for those roads scheduled for closure.

Heritage

Access plans will recognize, protect, preserve, enhance, and provide opportunities to interpret when appropriate, prehistoric and historic sites, buildings, objects, and antiquities of local, regional, or National significance. The goal will be to preserve their historical, cultural, and scientific values for the benefit of the public.

Recreation – Roads & Access

Dispersed Recreation - Dispersed recreation patterns are provided for and maintained through time. Dispersed camping sites are characterized by the presence of large healthy trees and low fuel loadings immediately adjacent to the sites. Access to dispersed sites on open roads is considered and maintained during all project planning and in the District ATM Plan. Future road closures are in locations that provide additional attractive dispersed camps, leave adequate space for camping and vehicle turn-around when possible.

Motorized Recreation - An appropriate mix of motorized and non-motorized recreation opportunities are provided to best meet the demands of all recreation users in the watershed. The appropriate mix will be determined at the District/Forest/Province level based on customer demand for motorized and non-motorized opportunities, and the special characteristics which Meadow Creek watershed offers. OHV opportunities will be a mix of trails, closed roads open to OHVs, open roads, and areas where cross-country use will be allowed. Non-motorized opportunities may take the form of road and area closures.

ROADS ANALYSIS – Economic Measures

Road maintenance levels on forest roads within the watershed are appropriate for the level of use and type of use received. Each road is maintained adequately to provide safe access at an appropriate level for the primary uses it was designed for. If the road is no longer needed or is causing resource damage it is removed and an alternative route designed if appropriate to meet the combined needs of the area. Tourism and lifestyle expectations are supported by the amount and type of access provided.

A. Deferred maintenance cost and miles of maintenance by maintenance level

Maintenance Levels	Cost Per Mile	Number of Miles
Maintenance Level 3	\$9,829 per mile	37.75
Maintenance Level 2	\$3,453 per mile	289.5
Maintenance Level 1	\$1,364 per mile	244
Decommissioned	\$0	99.34

B. Total decommissioning cost per road – use most cost effective method to meet closure and resource objectives (see above).

THE BIOLOGICAL DIMENSION

1. OLD-GROWTH/STRUCTURAL DIVERSITY

Old Growth/Structural Diversity

Over the 20 year planning horizon, the desired condition is to trend toward a mosaic of structural stages across the Meadow Creek Watershed landscape that reflect HRV, emphasizing development of MSLT and SSLT structural stages.

In approximately 100 years forested stands will be within the upper half of the historical range of variability. The amounts, patch sizes, and interspersions of structural stages will provide high quality habitat for the old growth associated wildlife community. Larger patches of old growth will be represented, generally larger than 400 to 600 acres, to provide for wildlife species that require or

prefer interior (away from the influence of edges) old growth habitat. Landtypes and disturbance regimes will largely determine patch sizes of old growth habitat. Portions of the watershed are characterized by non-forested habitats and narrow timbered stringers, precluding development of interior conditions and large patch sizes. The rationale for a minimum patch size criteria of 400 to 600 acres is based on the following:

- Northern goshawk post-fledgling areas are approximately 400 acres (Reynolds et al. 1991; McGrath and DeStafano 1995).
- A desired future condition of the forest in Fifty years, identified in the 1990 Land and Resource Management Plan refers to "old growth groves", "ranging in size from 30* to 600 acres within management areas 1, 3 and 18 (LRMP pg 4-15 1990).
- American marten were found to have home ranges ranging from 3,500 acres for females to 7,089 acres for males, almost completely comprised of old growth habitat, and marten were absent from areas with significantly less old growth habitat (Bull 1997).
- Pileated woodpeckers occupy home ranges in NE Oregon of approximately 1,000 acres, of which nearly 60% (600 acres) was in an old growth condition (Bull pers com 2002).
- The Land and Resource Management Plan indicates that pileated woodpeckers require 300 acres of nesting habitat adjacent to 300 acres of feeding habitat, therefore 600 acres of habitat was assumed adequate for a breeding pair of pileateds (LRMP pg M-17 1990).

No scientific basis could be found for advocating old growth patch sizes as small as 30 acres. Thirty acres was likely derived from a typical sized harvest unit rather than a biological requirement. This is not to imply that smaller old growth patches do not contribute to the habitat value of surrounding forests, but small patch size is not a meaningful basis for a long-term, old growth reserve networks.

Distances between larger old growth patches will generally be no more than two miles to facilitate dispersal of most old growth associated species found in this area (LRMP pg M-14,15 1990). Connective corridors between old growth patches will be an unnecessary management approach since the forest matrix between old growth patches will provide abundant options for travel by all wildlife species from the most mobile to sedentary permanent residents.

Large diameter (greater than 20 inches) down logs and snags will be well dispersed and in numbers capable of supporting 100% potential populations of primary cavity excavators. The following tables display the levels of snags and logs estimated to meet the 100% potential population objective.

Recommended Snag Levels

(La Grande Ranger District Snag Management Policy, 1997)

General Group	Bio. Environments	Snags/Acre	Size Criteria
Dry	G5-G8	2-4	>12" dbh, >20' tall
Moist	G4, some G5s	4-6	≥12" dbh, ≥20' tall
Cold	G1-G3	6-8	≥10" dbh

Down Log Guidelines

General Groups	Bio Environments	Logs/Acre	Size Criteria	Comments
Dry, Ponderosa Pine	G5 – G8	6	Average >10" diameter	>25% of these >20" average diameter
Moist, Mixed Conifer	G4 and some G5s	33	Average >15" diameter, average 35' long	40% should be >20" diameter
Cold, Lodgepole Pine	G1-G3	20	Average >10" diameter, average 30' long	Largest logs available should be left

(The ICBEMP Draft EIS, Alternative 4 (preferred), Standard HA-S8 (Chapter 3, page 152) states that in the absence of "locally developed standards", the above shall be provided:)

Coarse Woody Debris/Soil Coarse Woody Debris Requirements		
Habitat Types	Cover Type	Desired Tons/Ac
AF/LIBO	AF/LP/ES	12-25
AF/VASC	AF/LP/ES	12-15
AF/VAME	AF/ES/LP	9-14
GF/SPBE	GF/DF/PP	7-14
DF/PHMA	DF/PP/WL/LP	7-13
DF/CARU	DF	12-24
PP/FEID	PP	6-13

Trend: The area is trending toward a more seral mixture of species with more representation of the later structural stages. Silvicultural treatments have and continue to accelerate the development of larger diameter overstory trees. Other benefits realized by current treatments include reduction of fire risks to overstory trees, restoration of seral species compositions, and greater stand resilience. The trend in HRV is a reduction in SI and UR as they grow into subsequent structural stages.

OLD GROWTH and STRUCTURAL DIVERSITY DESIRED CONDITION MEASURES

- A. Average Historic Range of Variation, Existing acres and distribution of structural stages by biophysical environment (except MS and SSLT). Acres and percent difference from HRV and Existing.

Structural Stage	Avg HRV		Existing		Difference	
	Acres	%	Acres	%	Acres	%
Stand Initiation	5,314	8	16,629	29	+11,315	+21
Stem Exclusion Open Canopy (SEOC)	4,190	6	476	1	-3,714	- 5
Stem Exclusion Closed Canopy (SECC)	3,103	5	292	1	-2,811	- 4
Understory Reinitiation	6,034	12	30,939	54	+24,906	+42

Historic Range of Variation for SSLT and MSLT forest structures.

Biophysical Group	Total Acres In Biogroup	HRV for SSLT		HRV for MSLT	
		Range	Average	Range	Average
G1	541	1-10%	10%	1-10%	10%
G2	0	N/A	N/A	5-25%	10%
G3	14,216	N/A	N/A	30-60%	40%
G4	10,752	N/A	N/A	30-60%	40%
G5	24,299	15-55%	40%	5-25%	15%
G6	2,578	15-55%	25%	10-30%	20%
G7	6,539	15-55%	40%	5-25%	15%
G8	3,962	20-70%	55%	2-20%	10%
G9	1,017	20-70%	40%	2-20%	15%

2. ELK HABITAT EFFECTIVENESS

The forage:cover ratio will be near 60:40. The concept of managing "thermal cover" will have been replaced with a security cover approach. At least 30% of the forested area will be in a security cover condition. Security cover will be provided by a combination of conifer cover that at least meets the definition of hiding cover, and low levels of motorized access.

Road density will no longer be used to assess elk habitat effectiveness. Elk habitat effectiveness relative to roads will be analyzed in terms of the amount of habitat in concentric distance bands out from open motorized routes. At least 50% of the watershed will be more than 1km from an open motorized route (road or trail), and motorized access will be limited to designated roads and routes for all classes of motorized vehicles. Optimum conditions can exist in habitat that is greater than 1.8km from open motorized routes (Rowland, 2001).

Trend: Forested stands that experienced high mortality from insects in the early 1990's are being restored through fuels reduction, and promotion of a new green tree layer. Much of the hiding cover has been pre-commercially thinned within the past five years, and will recover to a hiding cover condition within the next decade. Drier biophysical environments are being restored to more open, single layered conditions. Understory reinitiation is being prepped to develop larger diameter overstory trees, and be more resistant to insects and pathogens. Given time, these UR stands that are being treated now will provide the highest quality cover and old growth habitat in the long-term. Non forested habitats are being rejuvenated with prescribed fire, providing higher quality forage for deer and elk, later into the summer months.

ELK HABITAT EFFECTIVENESS DESIRED CONDITION MEASURES

Assuming current LRMP standards and guidelines remain unchanged, which is highly unlikely, the following measures would apply.

- A. Acres and distribution of elk cover and forage - 40% cover to 60% forage for summer range, at least 30% of the forested land is cover in MA-1 transitional range.
- B. Open Road Densities – (*Also relates to Roads Analysis – Biological Dimension*)

Management Areas	Direction (Miles/Sq. Mile)
1	2.5
3, 3A, 1W	1.5
6	Road densities to remain essentially unchanged from 1985 levels.
12	Minimum necessary to provide for research and education.
14	Research dictates road densities as needed.
15	Avoid new road construction
16	Access construction allowed as needed to serve sites or facilitate their use.

If standards and guidelines are updated to reflect recent research, the following measures may apply.

- A. Habitat effectiveness for a security cover variable on winter ranges – 40% of the forested acres meets the security cover definition of at least meeting hiding cover

conditions (vegetation capable of hiding an adult elk at 90 meters), and greater than 1km from an open motorized route.

- B. Habitat effectiveness for a security cover variable on summer ranges – 30% of the forested acres in security cover.
- C. Habitat effectiveness for a roads variable – >50% of the total area is greater than 1km from an open motorized route on summer ranges. >75% of the total area is at least 1km from an open motorized route on winter ranges.

3. ROADS ANALYSIS – Transportation System

ROADS ANALYSIS – Biological Dimension Factors Measures

Aquatics

- A. Miles of roads in RHCAs – no roads (open or closed) within RHCAs.

4. RIPARIAN CONDITION

Desired conditions for aquatic and riparian-wetland areas within Meadow Creek Watershed would be dynamic, resilient, and consistent with local climate, geology, soils, land-forming processes, and potential natural vegetation. Aquatic and riparian-wetland habitat would be characterized by high-quality water and complex, well-distributed physical attributes that lead to high quality fish habitat and properly functioning stream channels.

High-quality water and fish habitat, and properly functioning stream channels are attained when adequate vegetation, landform, or large woody debris is present to:

- Dissipate stream energy associated with high flows, thereby reducing erosion and improving water quality;
- Filter sediment, capture bedload, and aid in floodplain development;
- Improve flood-water retention and groundwater recharge;
- Develop root masses that stabilize streambanks against cutting action;
- Develop diverse ponding and channel characteristics to provide habitat (water depth, duration, and temperature) necessary for fish production, and to support greater biodiversity (USDI BLM 1993).

Elements necessary for fish habitat/production:

- 57 or less degree F maximum weekly average temperatures throughout a Watershed;
- Streambed substrate of less than 12% fines, and cobble of less than 20 percent embedded;
- Stream turbidity low;
- There are no physical barriers to fish migration;
- There are over 100 pieces of large wood (12" diameter and 35" long) per mile;
- Pool frequencies described in this chapter.
- Pools over one meter deep are increased by approximately 200% throughout Meadow Creek and its major fishbearing tributaries;
- Roads increase drainage network of watershed by less than 5%;
- Road density throughout the watershed is less than 2 miles per square mile and no valley bottom roads exist.

Trends: Past land management activities on NFS lands within the Meadow Creek Watershed have led to adverse effects on aquatic and riparian-wetlands resources. Eight of 10 subwatersheds are "not properly functioning" and two are "functioning at risk." The primary influential factors for all

subwatersheds are: low percentages of adequately stocked RHCAs, high percentages of timber harvest within RHCAs, and high road densities outside of and within RHCAs. The trend of adverse effects has been reversed however within the last 5-10 years with implementation of new management direction, laws and policies (i.e. PACFISH).

RIPARIAN DESIRED CONDITION MEASURES

- A. Acres of RHCA disturbance – 5-15% of the forested lands (including RHCAs) will be in stand initiation structural stage (HRV value for LGRD). Riparian Management Objectives found in PACFISH call for >80% of any stream reach has $\geq 90\%$ stability).
- B. Miles of drawbottom roads – no valley bottom roads
- C. Miles of open native surface drawbottom roads - no valley bottom roads
- D. Stand Density indices for RHCAs – 100% adequately stocked stands within riparian areas where factors of slope, soil, aspect, and moisture support this condition.

5. THREATENED, ENDANGERED, AND SENSITIVE SPECIES

A Forest goal is to maintain native and desirable introduced or historic plant and animal species and communities. Provide for all seral stages of terrestrial and aquatic plant associations in a distribution and abundance to accomplish this goal. Maintain or enhance ecosystem function to provide long-term integrity and productivity of biological communities.

A District management goal is to protect and manage for the perpetuation and recovery of plants and animals that are listed as threatened, endangered, or sensitive.

Another District goal is to assure that management activities do not jeopardize the continued existence of sensitive species or result in adverse modification of their essential habitat.

Trend: The Meadow Creek watershed is currently in a predominantly managed condition due to past management activities and salvage of insect caused mortality. The area is out of balance with the historic range of variation in all structural stages, fully roaded, and lacking in large snags and down woody debris.

Should this trend continue, species sensitive to these conditions within the analysis watershed would be compromised. Populations of management indicator species, particularly goshawk, pine martin, pileated woodpecker, and other cavity excavators, would continue to decline or lose viability. However, as habitat conditions are moved toward the landscape envisioned in the Forest Plan, as amended, conditions should continue to improve within the project area and long term habitat will meet the needs of all species within the project area.

TE&S DESIRED CONDITION MEASURES

- A. Maintain and enhance viable populations of all native and desirable introduced or historic plant and animal species and communities.

6. FIRE/FUELS

A District management goal for fire and fuels is to maintain a diverse fuel profile, return fire intervals to historic occurrence levels, and reduce hazardous fuel accumulations across the landscape to reduce the risk of damage and resource/habitat loss to catastrophic fire. Reintroduction of appropriate fire intervals based on a fire regimes and biophysical characteristics will assist in creating a landscape more closely resembling that of pre-fire suppression conditions allowing fire to resume its natural role in the ecosystem.

Forests with reduced fire risk would be healthy, resilient, and productive. All forest species would be conserved and biodiversity optimized over the long-term. Public and firefighter safety would be optimized and the cost of wildfires in terms of suppression and resources lost would be minimized over time.

The Forest goal is to maintain air quality at a level that is adequate for the protection and use of National Forest resources, and that meets or exceeds applicable Federal and State standards and regulations. Currently, the Federal Clean Air Act and State of Oregon Air Quality Implementation Plan are the primary legislative mandates that guide management activities.

Trend: Effective fire suppression has resulted in increased natural fuel loadings and a vegetative shift from fire tolerant species to fire intolerant species. Forest cover in the analysis watershed has increased above historical levels. This has resulted in overstocking of stands with fire sensitive species. The amount of available fuel is greater than the historic range of variability.

There has been a significant increase in fuel loading because of insect and disease activity and an aggressive fire suppression policy. The risk of crown fire has risen because of increased fuel loadings and the greater continuity of the vegetative and fuel layers.

The eastern boundary of the Meadow Creek watershed is located 13 miles west of the City of La Grande. La Grande has been designated as a PM10 smoke particulate non-attainment air quality area by the Oregon Department of Environmental Quality. The eastern part of the planning area is within the 20 mile Special Protection Zone that surrounds the City of La Grande.

Wood stove smoke is the primary concern. However, the Special Protection Zone is an area of particular smoke sensitivity. Prescribed burning must be coordinated with the Salem Office of the Oregon Department of Forestry. Slash burning has been identified as one of the sources of PM10 within La Grande. La Grande is currently in a voluntary smoke management program. The voluntary smoke management program has been successful in not exceeding air quality within the past three years. Any prescribed burning must be carefully controlled to prevent smoke intrusions into the City of La Grande.

FIRE/FUELS DESIRED CONDITION MEASURES

Historical fire return intervals:

- A. Fire return intervals (FRI) by fire regime groups (refer to Chapter 3 for specifics). Fire regime 1 and 3 represent the high and moderate departures from historical fire return intervals. The fire regimes that have missed multiple return intervals are subject to dramatic changes in fire size, intensity, severity, and landscape patterns.

Fire Regime Group	Frequency (Fire Return Interval) FRI
I	0-35 year FRI
II	0-35 year FRI
III	35-100 +year FRI
IV	35-100 +year FRI
V	>200 year FRI

B. Acres and percentage of departure within fire regimes 1 & 3 by SWS

SWS	High FRI Departures Acres	Hi FRI Percent	Mod FRI Departures Acres	Mod FRI Percent	DFC/HRV Acres	DFC Percent
86A	1356	7	888	3	2244	5
86B	2602	14	3641	13	6243	13
86C	2017	11	2116	7	4133	9
86D	2075	11	4488	16	6563	14
86E	1060	5	1460	6	2520	5
86F	2044	11	3401	12	5445	12
86G	2629	14	2135	7	4764	10
86H	3489	19	4113	14	7602	16
86I	550	3	2867	10	3417	7
86J	874	5	3389	12	4263	9
Total	18,696	-	28,498	-	47,194	-

- C. Acres of Moderate and High Fire return interval departures by SWS - In 20 years it is possible to move about half of the total high and moderate departures from fire return intervals (25% per decade) to a maintenance level. High departure rankings represent a higher relative risk of fire caused losses to natural resources and other key ecosystem functions. The higher departures should obtain the most attention. To obtain even a 50% balance in acres at risk 23,597 acres would need to be targeted over 20 years. An annual treatment rate of 2,360 would result in reducing the existing condition by 5% a year.

High risk fuel loadings

- Number and percent of fires by size class - Fire size and numbers within those larger size classes continue to be reduced over time as hazard fuel loadings are reduced and isolated which will reduce the potential for extensive resource damage as a result of a large wildfire.
- Fire occurrence rates per 1,000 acres – No desired condition as this is primarily based on weather patterns and seasonal conditions.
- Fire risk acres by SWS – Reduce high fire risk fuel arrangements to moderate or low risk ratings. Reduce moderate risk fuels 30-70% across the watershed. Reduce or geographically isolate higher risk fuel loadings 75-100%. Low risk areas will be maintained at low level with treatments periodic treatments over time.
- Fire intervals (see chart and statements in section above) and the fuel profiles reflect historic ranges which result in conditions consistent with historical fire regimes.

Air Quality

- Tons of PM10 for wildfire – no more than 2,500 tons of PM10 per year
- Tons of PM10 for prescribed fire – No more than 15,000 tons of PM10 per year.

7. NOXIOUS WEEDS

The District management goal for noxious weeds is to pursue effective noxious weed management techniques, including education and prevention, which are also cost effective to contain or eradicate existing populations of these species and prevent the spread of any new infestations. Noxious weed control and management will stretch across all ownerships in a coordinated manner. Revegetation with desirable plant species as a means of restoration will be one of the final goal of noxious weed management.

Trend: Present distributions of many exotic plants, including noxious weeds, are increasing rapidly and in some cases exponentially. This rapid rate of expansion has overwhelmed the ability to curtail the expansion. Uncoordinated weed control efforts throughout the project area have been ineffective against noxious weeds and other exotic plants.

The rapid expansion of these species is one of the greatest threats to healthy native plant and animal communities. Noxious weeds are contributing to a decline in the quality of all habitats, reductions in forage and grazing, increasing runoff, sediment, and erosion, reducing biodiversity, and escalating the cost to control these species.

NOXIOUS WEEDS DESIRED CONDITION MEASURES

- A. Acres of noxious weed infestations (private and public) distribution and species –
Eradicate new introductions, contain and control existing large populations, prevent new infestations, and revegetate with desired species.

8. RANGE

District goals are for rangelands that reflect a mosaic of multiple-aged shrubs, forbs, and native grasses with management emphasis on maintaining a diverse native plant community. Conifers do not dominate on rangelands. Rangelands have the necessary structure and composition, ecological processes, and ecosystem function to meet most needs of federal and state listed and sensitive rangeland-dependent wildlife species. The distribution of different amounts and ages of shrubs, grassland, and woodland, are approaching desired levels in a mosaic pattern. Vegetation is appropriate for the site with multiple age classes of shrubs and grasses being common.

Riparian vegetation: a) provides an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems; b) provides adequate summer and winter thermal regulation; c) helps achieve rates of surface erosion, bank erosion, and channel migration characteristic of those under which the communities developed.

All riparian areas will be in late seral or potential natural community ecological vegetative conditions (that is 60 to 100 percent of potential natural community species composition). All streams on the allotment will meet state water quality standards on those portions administered by the Forest Service. Watershed and fisheries habitat conditions in all streams will be maintained and/or improved to fair and good conditions.

Trends: Initially, there were seven allotments established for this watershed. Several of these allotments were once grazed by livestock, including horses from the Umatilla Reservation. A note on the back of a ca. 1932 allotment map suggests that unregulated horse usage was overgrazing the hill tops within the Dark Canyon area. Subsequent forage studies indicated that the hilltops had not recovered as of 1963. Originally the bulk of the land included inside these allotments were utilized for sheep, but over time they were mostly replaced by cattle.

In the early 1890's, high numbers of Animal Unit Months (AUM) were grazed on the Wallowa-Whitman National Forest. Since the very high 1890 levels, livestock numbers have decreased substantially over time. The large decline is mainly attributed to the collapse of the sheep industry in Northeastern Oregon with cattle grazing now being over 90% of the total livestock usage. The early intensive livestock grazing impacted the riparian areas by reducing the riparian vegetation, collapsing stream banks, eliminating shade, and degrading water quality.

Recent management changes (since 1992) within the NFS administered lands and restoration projects on the private lands have helped to begin the return to more near natural conditions. Completion of restoration activities within the McIntyre Creek riparian area will occur within the next two years (2003). Projects within

this stream reach include removal of the drawbottom road through re-contouring, placement of large woody material, planting of native shrubs and grasses and continued rest from permitted livestock.

RANGE DESIRED CONDITION MEASURES

A. Utilization levels from the Forest Plan

Maximum Annual Utilization of Available Forage in Riparian and Upland Areas						
Management Level	Grass and Grasslike Species				Shrub Species	
	Riparian		Upland		Riparian	
	Sat. Condition	Unsat. Condition	Sat. Condition	Unsat. Condition	Sat. Condition	Unsat. Condition
Low	40%	0-30%	50%	0-30%	30%	0-25%
Moderate	45%	0-35%	55%	0-35%	40%	0-30%
High	50%	0-40%	60%	0-40%	50%	0-35%

***Notes: Refer to specifics under Chapter 3 – Rangeland Existing Condition

- B. Streambank stability - - Riparian Management Objectives found in PACFISH call for >80% of any stream reach has $\geq 90\%$ stability).
- C. Appropriate watering locations - Watering sites will be located out of riparian areas and adequately spread throughout the allotment to facilitate movement of animals. They will be located in areas to promote utilization in underutilized areas and as a management technique to move livestock out of undesirable areas and into desirable areas for resource protection.
- D. Changes in riparian vegetation from historic or desired grass/shrub systems - Riparian areas in Proper Functioning Condition are managed to maintain at least that condition with no downward trends, and there is an annual increase in the number of areas functioning at risk that show an upward trend. Riparian areas are covered by protective vegetation. Sediment and hydrologic regimes are appropriate to geoclimatic setting. Native and desired non-native plant communities in riparian areas are diverse and productive.
- E. Condition and age classes of shrubs - Within the Cool Shrub Potential Vegetation Group, 60-80 percent of the area is dominated by native grasses and shrubs with an overstory layer of shrubs; 15-40 percent of the area contains mixtures of perennial grasses and shrubs. Closed canopy sagebrush and conifers dominate the remaining area.

Within the Dry Shrub Potential Vegetation Group, 50-70 percent of the area is dominated by native grasses and forbs with an overstory layer of shrubs. Native grass and forb communities dominate Ten to 25 percent of the area. The remaining area is dominated by closed shrub communities with declining herbaceous layers, by seeding of exotic and native grasses and other plants, and in small areas, by annual grasses and noxious weeds.

Within the Dry Grass Potential Vegetation Group, 60-80 percent of the area is dominated by native grasses and forbs without conifer and shrub encroachment.

9. INSECTS AND DISEASE

Tree stocking levels and species composition are the result of applied integrated pest management techniques that prevent catastrophic insect and disease outbreaks. Stocking levels compatible with site productivity promote vigorous stand conditions resilient to insect and disease epidemics. Increased early seral tree species composition (such as Ponderosa pine and western larch) reduces the potential for major defoliating insects that have caused major damage in the watershed over the last 30 years. Sanitation harvest and reintroduction of fire reduce Dwarf mistletoe incidence to levels present prior to fire suppression. All acres with past harvest regeneration are fully stocked with a mixture of desirable early seral tree species.

INSECT DESIRED CONDITION MEASURES

- A. More specific Management Recommendations for each of the major and minor pests in the Watershed are found in the "Analysis of Insect and Disease Risks for the Meadow Creek Watershed, Wallow-Whitman National Forest." (BMPMSC-01-09, April 3, 2001-MCWA Appendix).